Issue 43 Editor-in-Chief: Walt Maybee Contributing Editor: Dennis Kubicki July 2000

DOE ~*NUTS*

★ *10th Anniversary Issue* ★

In July, 1990, Walter Maybee, the former fire protection program manager with the DOE Headquarters' Office of Environment, Safety and Health, then a senior fire protection engineer with Los Alamos National Laboratory, had a vision of a publication that would facilitate the timely exchange of useful information among the Department's fire safety community. With no official sanction or support, and relying on personal funds to cover the cost of postage, he began to publish and distribute "Hot DOE-Nuts."

Originially, the newsletter was sent to a limited number of DOE and contractor fire safety representatives who were encouraged to copy and distribute it to other interested individuals. Subsequently, with the assistance of the Headquarters' fire protection staff, "DOE-Nuts" was sent by surface mail to everyone in the Department's fire safety community and other interested parties. Eventually, the burden of a near 400 person distribution and the wider availability of E-mail within DOE compelled a reappraisal of publication and distribution practices. With Issue No. 30 (December 1996), a decision was reached to publish the newsletter electronically. Subsequently, with the advent of the DOE fire protection Web site, current issues of "DOE-Nuts" were posted there as well.

In addition to current news and views, and a few special features, this issue provides a limited retrospective on the AEC / ERDA / DOE fire safety program. (A more complete view can be obtained by reading Walt's history.) In doing so, it becomes clear that the struggle to inform management of the significance of fire risk and the importance of fire protection, to obtain critical resources to maintain adequate fire safety, and to share knowledge and experience so as to mitigate the threat from fire is never-ending.

We begin first by looking back ten years at the "premier issue" of "Hot DOE-Nuts."

HOT doe-nuts

Issue Number One July, 1990 W. Maybee, Editor

WHY THE DOE-NUTS ?

A number of appraisals of various portions of DOE have recommended improvements in communications. While this has been tried a number of times in the past, the only continuously successful modes have been the informal ones of discussions at meetings, or private newsletters. Several previous attempts at HQ-directed communications always ran into the situation where a number of marginal notations on drafts; saying such things as : "Why are we doing this?"; "Is this required?"; "How often do we have to do this?"; ended up in the editor's desk.

This is a new effort, by and for DOE and DOE contractor fire protection people. In answer to the above: We're doing it because we're tired of reinventing the wheel and we're sick of finding things out when it's too late to do much good. No, it isn't required, although it's been recommended in several versions. And finally; it will be published about as often as we can fill up some pages.

It's not official, it's not required, it imposes no requirements (although we will tell you about some), so what's in it?

Things like the following:

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RECENT MOVES

There's been a lot of fire protection personnel moves and additions in the last year. In the future, we intend to let you know what they are (with phone numbers). For now, here's a few:

Dario Luna left Savannah River for Nevada Ops. FTS 575-1588

Dennis J. Kubicki, FPE, from NRC, is the new Senior FPE in HQ. James T. Scott, FPE, by way of his own consulting firm is the new number two man in the Office of Quality Programs, Assistant Secretary for Environment Safety & Health. Dennis is at FTS 233-4794 and James at FTS 233-5615.

Dennis Skinner retired as Branch Chief at Idaho (and is now with Protection Technologies, Inc) and Richard McCuskey has moved up to the slot, leaving a vacant FPE position (Any Takers?) FTS 583-1531.

Carl Caves, former HQ Branch Chief, by way of Chicago and points west, has moved to the enrichment programs in NE-33. He is at FTS 233-5606.

Dennis Kirson, by way of the New York Port Authority, US Army-Korea, BNL, and SNLA, is now with the Albuquerque Ops. Off.

Last, and hopefully not least, Walter Maybee, your editor, is now with LANL in the Fire Protection and Utilities Group and is waiting your input to future issues at FTS 843-2146. Mail address is ENG-8 Mail Stop M718, Los Alamos National Lab, Los Alamos, NM 87545.

As we get caught up, we'll expand the changes section to include the great contractor FPEs and Fire Department personnel. Keep us informed (and see your name in print) **BIG LETTERS NEXT TIME, TOO.**

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STANDARDS TRIVIA

And a few that may not be trivial. We expect this will be a standard item in every issue (with your help). For now, one that caught us by surprise was a change in the NFPA 30 Flammable Liquids Standard. On a number of occasions, we were quizzed on the vent holes in cabinets. Should the bungs be removed or not? Looking at the screens, we assumed they were a flash arrestor and probably helped vent the cabinet. NOT SO! Section 4-3.2 makes it clear that cabinets should not be vented (for fire purposes, anyway) and when the vents aren't piped outside, the bung covers should be in place. The Appendix section discusses it further. We found a number of fire and safety people shared our misconception so we weren't quite as embarrassed as we should have been. Why? Because the change is new to the current edition-- which is the 1987 edition! With a little more time and incentive for following standards changes (and with a little help from our friends) this type of delayed goof will be rarer in the future.

A future standards activity that should have considerable impact on DOE is the NFPA Standards Council's establishment of a new Technical Committee on "Inspection, Testing, and Maintenance for Water-Based Extinguishing Systems". This was in April, with the scope, Chairman, and members yet to be selected. A good chance for some interested DOE-nuts to participate. And if you have trouble justifying participation, our next category of item should help.

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COMMITTEE WHEELS

Government agencies have been doing an increasingly good job in supporting and participating the standards making activities. For

NFPA, feds. hold 13 Chairmen positions, 3 Secretaries, 169 Principles, 42 Alternate, and 23 Non-voting positions. Some 92 people from 35 agencies participate. DOE has two Chairmen, five Principals and one Alternate positions, held by five people. But, as AEC was originally designed, the majority of the work is done by the contractors. They hold three Chairs, 21 Principals, and two Alternate positions with 17 people. Contractors represented are Sandia (Al and Lv), BNL, FNAL, MM (Oak Ridge), LLNL, WHCo, EG&G-Idaho, REECo, LANL, and WINCo. If they can do it, so can the others.

From time to time we'll insert history trivia and this is a good spot. When the plan for upgrades was submitted to Congress after the RF fire, one of the new initiatives was to develop a corps of experts in various fire prot. interest areas. (The FSOC program and the requirement for an FPE at each site were in the same commitment). The intention was to have HQ designate people; have them serve on committees, organizations, investigation boards, etc.; and also have them tour various other sites with projects of special interest in whatever area was considered. Then, when expert advice was needed or a new project was undertaken in that area, the expert would be called in to advise the other site.Since HQ never funded the program, and few field offices or contractors were able to support it financially, it never got off the ground. We think the idea is still good, however.

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EXISTING STANDARDS

We hope this will be a standard feature. Reinventing the wheel is a common exercise throughout the government and even within agencies and within disciplines. Fire protection in DOE is no different a problem, and maybe larger, than others. We intend to spread the word on what's new, good, (or maybe bad that didn't work) to reduce the load on all of us. For this issue, two shorties:

Argonne National Lab, Illinois site, has an excellent trailer standard. Pat Phillips, at NV, has wanted to get the DOE standard upgraded for some time, but the effort never got off the ground. In the meantime, there's no law against doing your own and there certainly is a lot of pressure to update any safety standards you use. If updaters are on your agenda, or you want to know what a pretty good standard looks like, beg a copy from Chief Gordon Veerman, FTS 972-6136.

If earthquake protection of sprinklers is still a problem, think of what you can do with the underground! At LANL, a standard drawing was developed for EQ protection of hydrants and valves. It's really just using PIVAs (yes, as hydrant valves, too) and keeping the

valves 5' from any hydrant or underground pipe connection. We don't know how it came to be (it was used for the TA-55 plutonium facility) but it isn't used anymore or anywhere else. Still, if you need a drawing that says it's EQ for underground fire .....

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DAMN, WE'RE GOOD !!

Another standard item (hopefully) will be a few pats-on-the- back items for ourselves (since no one else will). We were working over an update of the loss statistics for the last few years and the cumulative 47-89 figures, so here they are:

YEAR	VALUE	FIRE LOSS	TOTAL LOSS	RATIOS(c/$100)
1988	93,326,919M	415,878	7,047,591	0.04/0.75
1989	107,947,812M	543,095	6,931,882	0.05/0.64

Some other data are of interest : Since 1947...

There have been only 8 years when the fire loss ratio exceeded one cent per hundred dollars of value.

Since the Rocky Flats fire of 1969 (ratio=13.53), there has been only one year with a ratio over 1 (SPRO-1978-2.76).

Fires have accounted for nearly 42% of all losses.

The fire loss total is over $67 million, but if the loss ratio had been at the rate often cited for "improved risk" facilities (3c/$100), we would have incurred an additional $334.5 million in fire losses. A third of a billion dollars is good in anybody's system.

For all the years from 1947 to 1989, inclusive, AEC/ERDA/DOE suffered $67,182,538 in fire losses and $93,957,613 in other losses. The cumulative ratios are 0.50 c/$100 for fire and 0.70 c/$100 for other losses ($50 and $70 per million dollars of value, respectively).

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FEDERAL FIREFIGHTERS

There is only one federal employee fire department left in DOE; the one at Idaho National Engineering Lab (LANL's having gone to the County last year after much grief). One of the best organizations for the fed. fireman is the FEMA-sponsored federal Fire Service Task Group which meets bi-monthly at various DC-area locations. A number of activities are in the works, including position reclassification by DOD and firefighter certification by DOD. Some

years back, it was the DOD initiative that got firefighters upgraded to GS-5 levels and DOE was able to follow suit. Currently, the Air Force got the Chief position reevaluated and a number of raises to the GS-13 level were achieved. A federal pay bill is an active consideration with Congressman Weldon and he is attempting to get the various fed. organizations to agree on a single bill. Lack of coordination has been the principal obstacle in the past.

Your editor is on the FEMA mailing list for the minutes, having previously been the Secretary of the group, so you will be advised of actions of interest. This is a good group for the DOE-HQ staff to participate with as many of their activities are of general interest and it's one of the few organizations where fed. fire professionals can get together.

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UNDERFLOOR WHAT ?

Two documents of interest were recently received. Dr. Zallen of the U of NM's New Mexico Engineering Research Institute wrote the NFPA's Standards chief supporting the development of "An evaluation system for comparing the properties of suppression systems and agents, sensitive to the features and requirements of the hazard being protected", The immediate concern is he computer room and underfloor areas in particular. DOE has over 1,300 Halon systems installed, many in underfloor computer spaces. Future protection of these areas will be a problem. If you haven't prioritized and justified your systems, now is the time to start. A blanket prohibition may be an overnight "SEN".

A number of DOE facilities had used sprinklers for underfloor protection and the second document is the result of some LLNL tests on underfloor fires. They got some very severe fires from typical wiring configurations. Very shortly after sustained burning was confirmed, thick black smoke totally obscured the fire chamber and sometime during the test, a 1000cfm HEPA plugged. They also used a number of sprinkler configurations and types and the bottom line is; **THE SPRINKLERS DON'T WORK.**. More unfortunately, they only ran the tests on a 6" floor space. The tests planned for 18" and 24" spaces had to be terminated, as well as additional tests, due to lack of funds. This is one of the programs that was formerly sponsored by DOE and even more unfortunately terminated. If DOE can't do it, maybe some of the individual sites can help. If you can justify some work on your own, contact Harry Hasaegawa at FTS 543-3175 before you start anything.

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WHO's WHERE ?

Another item that will be a regular is a review of the fire protection organization at various contractor and DOE offices.

Let's start with Los Alamos National Lab. Fire protection is part of the Engineering Division at LANL and is part of the ENG-8 Group, Fire Protection and Utilities. The Group writes procedures, policy and specs and reviews all eng. projects. An evaluation is also made of all facilities on varying schedules. Currently, assistance is provided in-house "tiger teams" from the Safety groups. The Group also provides tech. assistance to the rest of the lab and runs the fire equipment maintenance, test and inspection services through the support contractor on-site, Pan American World Services. Fire Department Liaison, extinguisher training, and other services are provided. Current staff is:

Jim Gourdoux (FTS 843-2295), Group Leader, PE, EE, SFPE, by way of Factory Mutual, LANL, the Army-Europe and LANL again.

Don Davidson (FTS 843-2089), Section Leader/,Fire Protection, PE, FP&SE(IIT) and MSNE, SFPE. 37 yrs in product safety, general FPE and HPR-FPE.

Luke Bartlein (FTS 843-9044), FPE, PE, FP&SE(IIT), by way of fire test labs and 12 yrs HPR-FPE.

Don Helmer (FTS 843-1737), FPE, GE, SFPE, 17 yrs of HPR-FPE including NTS. (Rio Grande Chapter SFPE Pres.)

Walter Maybee (FTS 843-2146), FPE, ME, SFPE-Fellow, 35 yrs by way of FIA, AEC-SAN, and HQ.

Howard Richerson (FTS 843-7202), FP Specialist, in charge of FP maintenance/test/inspection programs. 30 yrs with the Los Alamos FD, 11 yrs with LANL.

Albro Rile (FTS 843-9045), Fire Training Spec. in charge of extinguisher training. Part time inspection, fire marshal activities. Albro is the real veteran. With LAFD since 1947, retired as Fire Marshal in 1977 and working with the lab FP groups in a half-dozen organizational changes since then. That's Albro's picture in the last "Fire News", getting a members' advisory award.

Don Keigher. Not part of ENG-8 but too important to omit. Don was one of the first AEC FPEs. Chicago Ops in `49. RL in '53, Branch Chief at RL in `62 (where he hired Andy Pryor and then Pat Phillips), then to NASA HQ as top safety man (w/Bill Hanbury as fire) until he retired and came to LANL where he retired again after about 15 yrs as the first, and subsequent head of a growing FPE group. With all his NFPA standards activities and SFPE stature, plus the fact that he still works part time for the safety groups (and a little other consulting when he feels like it,. Don is too important a part of the whole LANL story to overlook.

As a bonus "Who's Where", we`ll throw in the San Francisco Ops Off. Originally a local office under CH (Don Keigher made some of the

first LBL surveys) it became an Ops Off. in the '50s and Glen Orihood was the first FPE from '59 to '61. Walt Maybee took his place in '62 until he moved to HQ. in '70. From years at the Bureau (BFUP) in S.F., Joe Juetten, came in '71 and became Branch Chief about `84, which he still is. John Barr became the FPE from `84 to late'89 when he went to LLNL. The current FPE is Don Kelley, since late '88. Don is a Maritime Academy grad. After some naval sub. experience , he started at FIA in'55 (with your editor) and then to Cape Kennedy, OSHA, HEW and back to S.F. with HEW until they moved to Texas. (Don is FTS 536-7367 and Joe is 536-7762)

Good people in good jobs. That was the real secret of most of AEC/ERDA/DOE's fire protection success. Next issue's spotlight organization? Maybe yours! Send us a list.

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MORE RESOURCES ?

One of the best things ever to come out of HQ (if we do say so ourselves) was the "Fire Protection Resource Manual". (Your field office did send you copies, didn't they?). With the increasing bureaucracy, and after trying 8 years to revise the FP Order, it was obvious some means was necessary to get things done. The Manual became a great way to issue interpretations in a semi-permanent form (letters and memos get thrown out after 2 years. Try to find the Admiral's SEN notes three years from now). It also was a way to preserve history (Exemption lists and "background' notes). If HQ isn't able to keep it going, there's no law against the field offices or contractors adding to it themselves. (We're currently upgrading LANL fire documents to include all the decisions made in recent years- and sometimes it's hard to find the source document!) Anyway, a good topic for the Nov. FP conference (Glad to see we finally got back on what was supposed to be the annual track).

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Believe it or not, it may finally get revised and/or updated. A July meeting in Idaho will see a group working on a revision and it should be ready and out for review by the time of the Nov. conference. John Jensen, an Idaho consultant (formerly EG&G, ID), is the coordinator.

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REORGANIZATION

After an early item on reorganization, it's nice to note a later change. As of June, there is now a people and facilities safety division (we're avoiding exact titles as everybody is on the usual

120 days detail until the organization is finalized. (Deja Vu?) At last, we can look at an organization chart (if HQ ever distributes them) and guess where fire protection might be.

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IDIOTIC

For those who seem to think we do some idiotic things, relax, it's not all in DOE. To be specific, we were amazed to read a draft Mitre report comparing NRC and DOE fire protection reqs. Besides the fact that they overlooked the obvious reason for some differences (we own the facilities, we have a mission, and those are our people) they really goofed in one area where, in 36 pages, they kept talking about how NRC referenced NFPA standards (although not requiring them, while DOE hardly ever did. We finally realized what happened. They looked at the Orders they were given, which didn't include the Standards Order. Thus, they had no way of knowing that the references to required standards were taken out of the discipline Orders years ago and put into one Order. If they had, they would have found that all the NFPA standards are mandatory standards. Not too big a goof, except that this is a contract for the Nuclear Facilities Safety Board and if the rest of their study is as accurate,.....

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SYSTEMS SAFETY

A nice call from a Pantex FPE revealed that an item in the last "804" concerning some systems safety meeting call for papers was being answered. They had an in-depth consulting review of the reliability of deluge systems after several expensive trips. The paper sounds absolutely fascinating (and **NO, DON'T GET RID OF THE SYSTEMS)** and we suspect it will have to get a lot more publicity within DOE then it will get from systems safety. We'll do our part. Which is a cue for what may be another standard item each issue:

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PROFESSIONAL HELP

PLC was one of the contractors in the above study. They also did much at SR and Y-12. Hughes Associates did several excellent jobs at RF. FM has been loaned for many special jobs. using the survey funds and at no expense to the using contractors. News to you ? It shouldn't be, but since it is, that's another of the reasons for this. We'll carry details in future issues, if any.

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IF ANY ?

Yes. If the DOE FP fraternity (and sorority) feels it's of value, we'll keep it up. Let us hear from you.

Perhaps unknown to most readers is the fact that “Hot DOE-Nuts” was not the first attempt at publishing a newsletter relating to fire safety within the complex. In July of 1948, the first issue of the AEC’s “Safety and Fire Protection Newsletter” was published. Unknown to this author is the fate of this periodical. Only Issue Number 1 remains in the archive, and it is reproduced below for your review.

AEC

SAFETY AND FIRE PROTECTION NEWSLETTER

Issue No. 1 July 29, 1948

EXCHANGING INFORMATION

It is a pleasure to help launch this initial Safety and Fire Protection issue of the AEC Newsletter. Safety and Fire Protection issues are planned to promote the exchange of useful accident prevention, fire protection, and related information between ourselves—we of the AEC and the contractors, their subcontractors and suppliers in the atomic energy field.

The single goal of these Newsletter issues is to provide an unclassified medium outlining improved methods, new devices, directional accident experience, better health and sanitation measures, and recent publications so we can do a safer and more efficient job. To obtain the best information available, therefore, will require our full cooperation, the contributions of all.

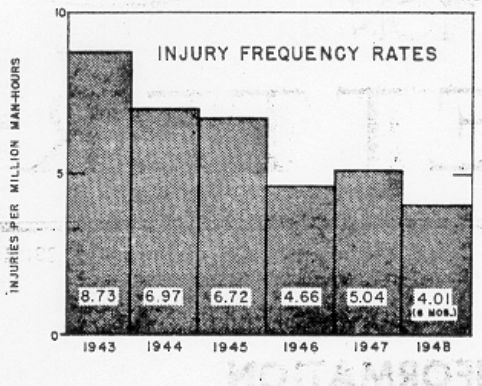
I am confident that you will want it as informative and as useful as possible and that you will participate to make it so.

Carroll L. Wilson

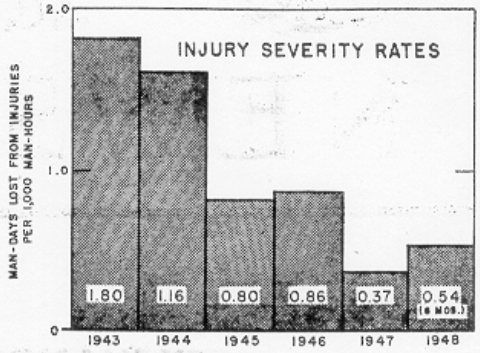
CARROLL L. WILSON
General Manager
Atomic Energy Commission

SUMMARY OF ACCIDENT AND FIRE EXPERIENCE

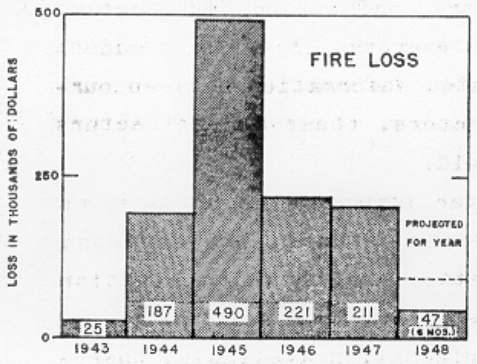
AEC AND CONTRACTORS

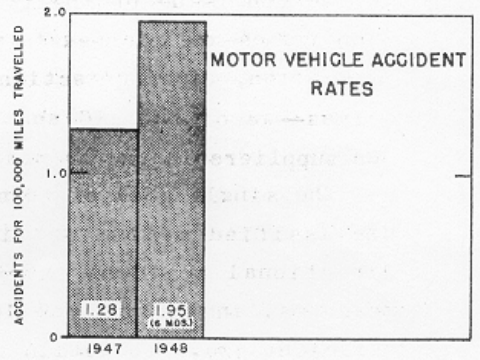


Injury frequency through June 1948 compares favorably with the NSC 1947 rate of 8.88 for the chemical industry, nearest comparable, although atomic energy rates include construction, a more hazardous activity, ranging from 85% in 1943 to 8% in 1948. 1948, despite increased construction, can be the safest year in the atomic energy program.



1948 semiannual motor vehicle damage totaled $36,000, compared to $47,000 for 12 months of 1947. The present accident rate is below the NSC 1946-47 commercial vehicle rate of 2.89. (Chart shows only two years; contractors' data were not collected prior to 1947.)





The AEC 1948 projected fire loss ratio, including communities, is 0.48¢ per $100, compared to 0.71¢ in 1947. The national industrial average is about 15.0¢ per $100; community losses are much higher.

Your Publication

Safety and Fire Protection issues of the AEC Newsletter will endeavor to exchange pertinent information in the safety field of the atomic energy enterprise. It is designed as a medium to pass along the information you think will benefit someone else's job, and you will profit by the information of others. It is a cooperative effort and it is your publication.

Safety and Fire Protection issues will not be made up on a periodical basis; they will go out only when there is information available. The material will be gathered by the Washington AEC Safety and Fire Protection staff, but they will depend primarily upon your information concerning accident prevention, fire protection, and related subjects.

Issues will be numbered serially, dated, and reproduced at Washington, D. C. Distribution will be made initially through AEC Offices of Directed Operations and Area Offices,

(Continued on p. 4)

New Gloves for Handling Graphite Bars

Although several Commission offices have advice of this glove, a sample pair is being sent to each AEC Office of Directed Operations where it will be available in the office of the Safety Director for inspection by contractors and others who may be interested.

The glove was developed by Ralph V. Batie for handling nonporous and dry slippery objects, particularly graphite bars. It is made of canvas with a single piece of foam rubber covering the palm and planar surfaces of thumb and fingers. The glove provides effective surface friction for grasping and affords the fingers considerable protection against injury.

Batie developed the glove while Chief of AEC Safety Branch, Brookhaven National Laboratory. His description follows:

"The gloves have proven to be extremely helpful in the handling of graphite bars or any dry slippery materials. They are designed to give maximum use of the hands and fingers plus the cushion afforded in case of dropping on or catching the hand or fingers in or between. It has been found where previously cases had been reported in which broken and smashed fingers were occurring during the unloading, storing, and machining of graphite bars, that by using these gloves, the finger and hand injuries have been completely eliminated.

"During heavy working conditions where the workman is lifting graphite for the full work day, the gloves become saturated with graphite but still maintain the non-slipping surface which affords the full protection to the workman, as normally when ordinary gloves were used, they became hazardous to work with after only a few hours. The workman's arms and fingers became tired from trying to maintain a firm grip on the bars, and in many cases, the finger fatigue was the cause of lost-time injuries.

"The glove can be worn until the sponge rubber becomes completely torn from the cloth backing to such an extent that there would not be enough of the rubber left to give a good safe gripping surface. With care, the gloves will last under heavy work approximately 5 to 10 working days, or 80 hours, as compared with leather gloves which become hazardous due to the graphite absorbed into the leather within 2 to 4 hours, and cloth gloves 4 to 8 hours.

"Future gloves will have the rubber cloth backing in place of the black duck backing as shown on the sample, as it has been found that by roughening the surface of the rubber cloth before applying the glue, it makes a much better back than the black duck which in some cases has pulled away from the foam rubber, causing the glove to wear out much faster.

"The Pulmosan Safety Equipment Corporation, Brooklyn, New York, has been extremely cooperative in helping to perfect the glove, and has now introduced it into their glove line to the general public at a cost of approximately $16.00 per dozen, but as soon as they get the dies cut to where large quantities can be turned out, the price, no doubt, will be reduced. They are now setting up in St. Louis, Missouri, in order to produce the gloves in large quantities for graphite manufacturers who have shown interest in them. So far as can be found, this glove is the only one to date that offers a non-slip surface plus a hand and finger protection in the handling of graphite bars."

Compressed Gas Cylinders on a Rampage

About 14,000 oxygen cylinders, stored in the open for more than a year at a California ordnance depot, were destroyed by fire August 29, 1946. When the first cylinder exploded, the direct cause of the fire, the outside temperature was near 90°F. Sympathetic explosions were induced in the remaining closely stacked cylinders and all exploded in less than five minutes. Some acetylene cylinders were stored with the oxygen but these were not considered a major factor in the spread of the fire. Hot fragments from exploding oxygen cylinders traveled as far as 100 yards through the air to cause ignition of other combustible materials stored in the vicinity. Eight 2½" hose streams were used for 8½ hours to combat this fire that involved a $472,550 loss. Investigators of the accident believe the wide temperature changes, to which these cylinders had been exposed, were responsible for weakening the cylinder walls prior to explosion.

This fire points the need for restricting the number of cylinders stored in a single group, segregation of acetylene and oxygen cylinders, protection of cylinders from direct sunlight, and frequent inspections for possibly defective cylinders. The hazard in combatting fires involving compressed gas cylinders is also apparent.

Three compressed gas cylinders, each containing 50 pounds of carbon dioxide, were delivered to a loading platform of a California oil company. A half hour later the safety disc on one cylinder fractured, the cylinder fell over and in so doing struck the valve, which broke off allowing the contents to be discharged through a ½" orifice. The jet action of the escaping gas caused the cylinder to take off like a rocket. Traveling at terrific speed it reversed its direction three times, struck a series of obstacles, and finally came to rest against a large post, having travelled a total distance of 369 feet. This cylinder was made to ICC specifications, had been periodically tested to three times its working pressure (1000 p.s.i.), and was equipped with a rupture disc designed to "blow" at pressures between 2500 to 2800 p.s.i. Besides need for keeping cylinders out of direct exposure to sunlight, the above incident also illustrates the desirability of keeping cylinders secured in position. The use of compressed gas cylinder protective caps (required by ICC for interstate shipments but not generally required by state laws) affords protection of the valve mechanism on cylinders when not in service.

Your Publication (Continued from p.2)

and articles for issues should preferably follow the same channels to Washington. Issues will be reproduced with adequate margin for binding, and an index to issues is planned for distribution periodically.

If you have an article, a suggestion, or an idea for a safer operation, send it in. It may be exactly what's needed by someone else. If you have a problem on which you would like information, send that in too. Perhaps someone has the answer. Your cooperation will assure that Safety and Fire Protection issues of the Newsletter contain desirable information and are distributed frequently.

Worth Reading

Grounding Principles and Practice—Static Electricity in Industry by Robin Beach, Head of the Department of Electrical Engineering, Polytechnic Institute of Brooklyn, New York (May 1945 issue of *Electrical Engineering*). The hazards of fire and explosion are ever present in many industrial processes, awaiting only a spark to bring disaster—and static electricity can and often does provide the spark. The limitations of grounding as a universal remedy and the need for expert analysis of the problem are emphasized in the article, which is the last of five based on a series of lectures on the subject which was sponsored by the power and industrial group of the AIEE New York Section during the 1943-44 season. (Publisher of Electrical Engineering advises that reprints of the article, in minimum quantity of 100 copies, can be made available. If requests for sufficient copies are received, Washington AEC will order and distribute.)

Effects of Electric Shock by H. A. Poehler, Microwave Development Section, Electronics Engineering Department, Westinghouse Electric and Manufacturing Co., Bloomfield, N. J. (July 1944 issue of ELECTRONICS). An engineering report discussing in detail the three major causes of accidental electrocution. Considerations of voltage, current, frequency, and duration are taken up. Chances for survival under various conditions are analyzed. Electrocardiograms are shown. (Copies have been sent to AEC offices of Directed Operations where they may be obtained from the Safety Director.)

Static Electricity, U. S. Department of Commerce, National Bureau of Standards, Circular C438. The nature and origin of the charges of static electricity arising in industrial processes are discussed and various methods of mitigation of the hazards which they introduce are suggested. By defining suitable units for the quantities involved and stating quantitative relationships between them, a basis is given for an engineering treatment of the phenomena. May be obtained from the Superintendent of Documents, Washington 25, D. C., price 10¢.

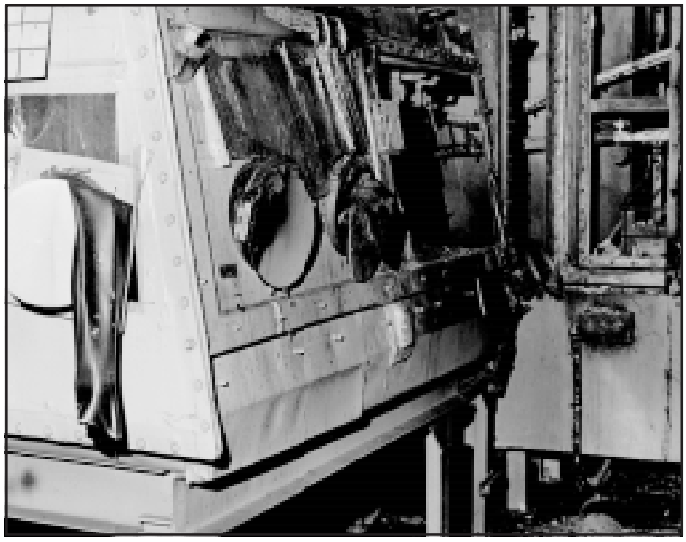
Uniform Definitions of Motor Vehicle Accidents, First Revision, developed by the National Conference on Uniform Traffic Accident Statistics. These definitions were established for more uniform accident experience reporting, as distinguished from insurance and liability reporting needs. Definitions are under study for accidents involving Federal Government-owned vehicles. Single copies available without cost from Federal Security Agency, U. S. Public Health Service, National Office of Vital Statistics, Washington 25, D. C.

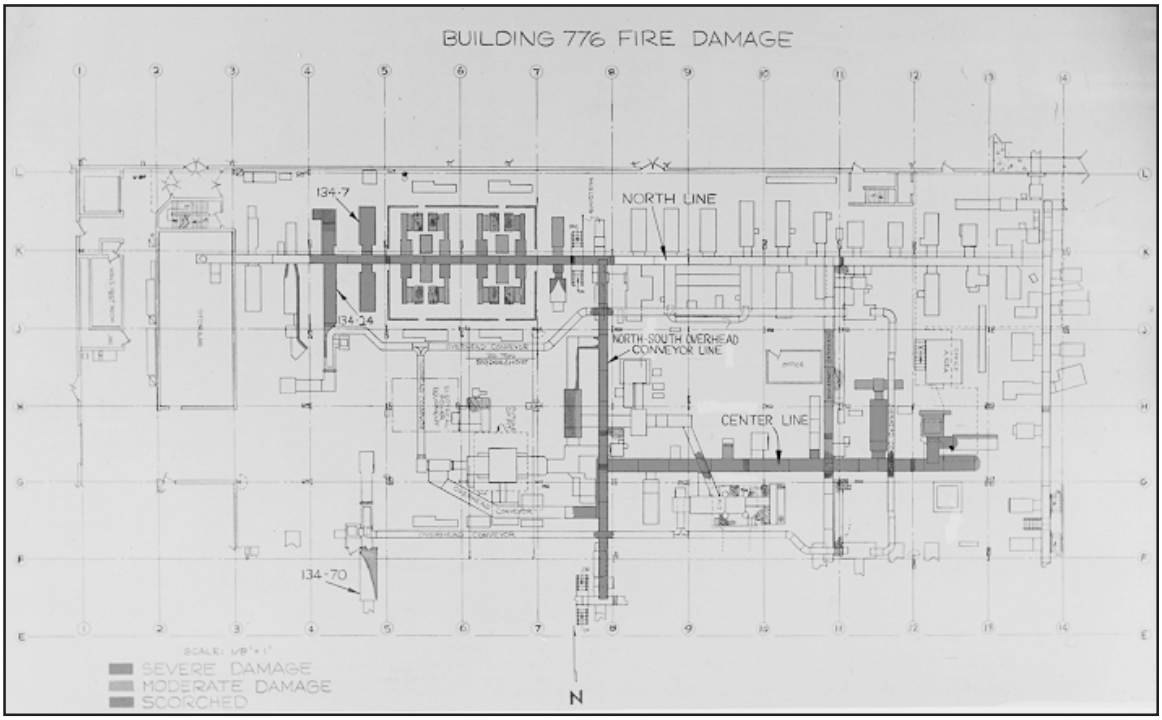
Film on Respirators

The Air We Breathe, Mine Safety Appliances Co. An educational sound motion picture (16 mm. sound-on-film, 26 minutes) covering the field of respirator protection against dusts, gases, and other air contaminants. The film tells the "why" and "how" of protection; shows tests applied to respirators and demonstrates proper care and maintenance. Good for supervisory meetings. May be obtained on free loan from Mine Safety Appliances Co., Pittsburgh, Pa.

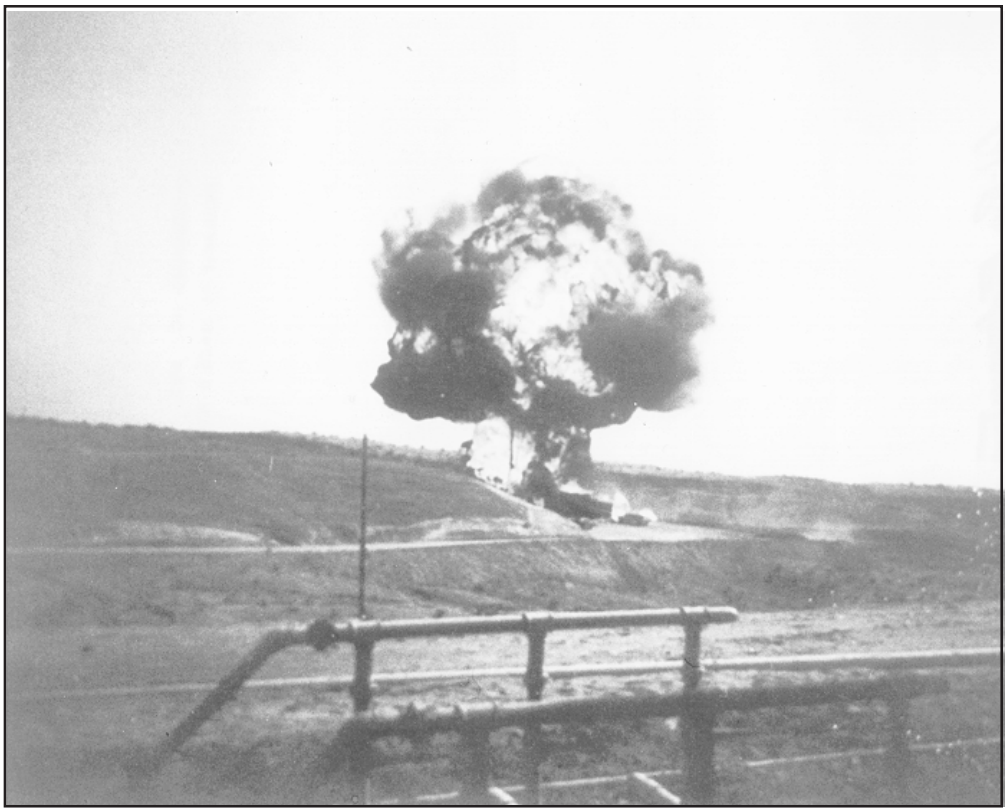
Although the AEC / ERDA / DOE has generally had a commendable loss record, the last 50 years have seen a number of significant fire events. Among them are:

The Rocky Flats Fire of 1969





The Elk Hills oil rig explosion and fire of 1977



The Richland Wildland Fire of 1984 (Not a big loss, but relevant to today's circumstances)

The Wide Band Laboratory Fire of 1987 at FERMILAB

More examples abound, but reproducible photographs were lacking. The point is that throughout its history, the AEC /ERDA /DOE has had to confront a spectrum of (sometimes unconventional) fire risks that have not always been sufficiently mitigated by fire prevention/protection/emergency response measures.

Throughout our history, various efforts have been made by Headquarters to get the "Field" to "do the right thing." The most recent example is the 1998 Secretarial Memorandum on Fire Safety Programs. In reviewing the archives for this issue of "DOE-Nuts" we came across a directive from the General Manager of the AEC to all Managers of Field Offices, dated February 4, 1971. It noted that, based on a (then) recent review of contractor fire safety programs, there was "...a clear need for additional effort by the AEC and its contractors to provide an increased level of loss prevention activitiy." The directive delineated a course of action "considering...the urgency of the situation." It included recommendations for:

- "At lease one professional fire protection engineer" in each contractor's safety organization.
- "A system shall be established requiring a safety analysis **of all operations on a continuing basis** (emphasis added) and a safety analysis prior to the construction of all new facilities and modifications to existing facilities."
- "Field office audits and in depth inspections in the fire safety area should be strengthened."
- "Headquarters surveillance of Field Office fire safety activities should be strengthened."

Considering the last two bullets particularly, these recommendations are as relevant today as they were 30 years ago.

One of the continuing strengths of the Department is its staff of qualified, experienced and dedicated fire safety professionals, including those on the staff of site emergency services organizations. When considering the more distant past, the identity of thee early colleagues is largely unknown, although Walt provided brief biographies in his "History of AEC / ERDA / DOE Fire Protection." The archives produced several group photographs such as the one on the next page, which was taken at the 1970 AEC Fire Protection Conference in Nevada. A close look will reveal some much younger, yet still familiar faces including those of:

Pat Phillips	Andy Pryor
Carl Caves	Joe Juetten
Dick Glover	John Bell
Walt Maybee	Bill Cruickshank

One member of this distinguished group, Dick Glover, has offered his thoughts on the fire safty program.

Glover Perspective

With regard to my perspective on how things have changed (and how they have not) in the past ten years is somewhat clouded by retirement and the memories of the "good old days." When I first started with the AEC in Albuquerque as a fire protection engineer, there were very few fire protection engineers in the AEC. The best I recall, there were 16 fire protection engineers: R. Smith/F. Branningan, HQ; H. Spavin, NV; R. Beers, ID; A. Weintraub, NY; J. McNamara/L. Oldendorf, CH; B. Cruickshank/R. Glover, AL; R. Handler/J. Bolin, OR; D. Notley/R. Parriot, SR: W. Maybee, SAN; D. Keigher/P. Phillips, RL. It wasn't until after the 1969 Rocky Flats fire that staffs were "beefed up" and fire protection personnel added to area offices and field offices. Also, contractor fire protection personnel began playing a more visible role at this time.

The one constant over the years seems to be that "Management" always was (is) looking for ways to save money and reduce both the initial costs and maintenance costs of facilities and operations. We spent a lot of our time in the early years reviewing proposed/new construction to insure fire criteria. Today, the same cost cutting is prevalent, but I don't believe the "Improved Risk/Highly Protected Risk Criteria" is the factor it once was. As a matter of fact, any discussion about "insurance" seemed to be taboo in my involvement with the "Work Smart Standards" at Nevada a couple of years ago. In my judgement, that whole program of reviewing/ inventing new standards was another way of trying to save money. That, however, is another story.

One of the biggest changes over the years, in my judgement, has been the inspection program.

When I first started in AL, Cruickshank and I spent more than half our time on the road doing fire protection inspections of both AEC/AL facilities and our supplier contractors. These were the only outside or independent inspections done beyond those done by the contractor. Headquarters never made an inspection of a facility, and rarely "audited" a field office. We then had the insurance companies inspect our facilities after the 1969 Rocky Flats fire. In my judgement, this was one of the best things we did to improve the level of professionalsim throughout and to upgrade the level of fire protection. Then Headquarters, both the program offices and the safety office, started to conduct inspections/surveys/audits of the field offices and contractors. There were a variety of team type efforts, including the management surveys. Then multidisciplinary teams were formed and later the "Tiger Teams" were in vogue. I'm not sure what the term is today. I'm not convinced that we are doing a better job today; certainly it doesn't appear to be as cost-effective.

Walt, your tribute to Pat Phillips was very good. Right on! Another person I believe deserved more recognition than he got was Bill Cruickshank. He never served on any national commitees or such, therefore did not have high visibility. He was a good engineer and relentless when it came to getting protection at a facilty he thought necessary (i.e., smoke venting at the Kansas City Plant and the "Purple-K" escort trucks for the safeguards and security personnel that escorted weapons shipments throughout the country. I believe the quote by Theodore Roosevelt to be appropriate to Bill. "It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly; who errs and comes short again and again; who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause; who, at the best, knows in the end the triumph of high achievement; and who, at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat."

Best regards,
Dick Glover

Fire Safety Committee Defines Agenda

The DOE Fire Safety Committee met on May 13 under its new chairman, Jim Bisker, to identify planned activities for the coming year. With regard to the Committee itself, membership and activities may need to be "streamlined" in the future "to align with current EH philosophies." Work will continue on a revision to the Nuclear Air Cleaning Handbook to feature a chapter on fire protection. Leo Derderian will continue his role in this effort. No decision was reached at the meeting regarding the status of the Pimer on Spontaneous Heating and Pyrophoricity, although subsequent discussions within the Headquarters' Office of Nuclear and Facility Safety Policy (EH-53) resulted in a tentative decision to process a "Reaffirmation Notice." The current draft of a revised DOe Order 231.1, "Environmental Safety and Health Reporting," will be revised to feature "less qualitiative reporting fields."

A complete copy of the meeting minutes can be viewed at:

http://tis.eh.doe.gov/whs/TechComm/fscmmin.html

The More Things Change . . .

Ten years ago, when the first issue of "Hot DOE Nuts" was published, the Department's fire safety program had recently been evaluated by an independent group of "specialists" with the National Academy of Sciences (NAS). Among the findings contained in the published NAS report were these:

- "Fire is one of the most significant contributors to risk at DOE sites."

- "Fire safety criteria are being inconsistently and inadequately applied across the Complex."

On the plus side, it was noted that DOE was generally well served by its emergency services organizations with "...fleet(s) or modern mobile apparatus and highly trained fire fighters." Additionally, despite the occurrence of a few fires of major consequence, the "DOE property losses due to fires have been reduced significantly."

Today, we have the perspective of the Defense Nuclear Facilities Safety board (DNFSB) in Technical Report 27, "Fire Protection at Defense Nuclear Facilities." Amont the many observations included in the report were these:

- "...fire remans one of the main sources of risk to the public and workers...fire is often the dominant public-risk accident at DOE nuclear facilties."

- "...the Board's staff has observed departures from established DOE requirements that have resulted in an unacceptable standards set." (this conclusion was reached within the context of the implementation of "Work Smart Standards.")

The report did acknowledge the benefits to the DOE from its "...highly trained and dedicated on-site fire department(s)..." and that "DOE and its predecessor agencies have had a good record on fire safety. Fire losses have been kept to a minimum during the past 30 years."

(Technical Report 27 can be found at: <http://www.dnfsb.gov/techrpts/2000/tech27.pdf>)

Breaking Up That Old Gang of Mine

The board of directors of USEC voted on June 21 to close the Portsmouth uranium enrichment plant in Piketon, Ohio. This decision will mean the eventual loss of most of the 1,900 jobs, although efforts will be made to find alternate employment for current workers.

Prompted in part by the recent security lapses at Los Alamos, there has been much talk in Washington recently regarding the need to create a separate entity for DOE weapons-related programs. Normally, one would consider this to be merely political rhetoric, especially in an election year. But when these sentiments are expressed by both Republican and Democratic members of Congress, one has to take note. The most often expressed analogy is to create an agency similar to NASA. Legislation to affect such a change would likely emanate from the next session of Congress.

Did You Hear The One About... (DYHTOA)

DYHTOA ...the largest fire in the 50-year history of a large Government agency? The one that wasn't reported to the safety staff? The one that wasn't even investigated? The one that the agency didn't even know about until they read it in the newspapers?

That was the 3/26/79 fire in the Kane Moving and Storage warehouse in Washington, DC. It was destroyed in a fire that required a third alarm and three special alarm responses by the DC Fire Department. The response included 16 engines, 5 truck companies, two rescue squads, and other support apparatus. The fire destroyed property belonging to the House of Representatives, the Treasury Department, the DC Government, a private kitchen equipment distributor, and $50,000 worth of DOE furniture. Until GSA informed us, we didn't even know we had a loss.

The largest? Yes it was. After all, I didn't say dollars, as in the $26 million loss at Rocky Flats; or acres, as in the thousands associated with recent brush fires; square feet of building, as in the many thousands affected at the Gaseous Diffusion Plant. In terms of fire department response, it was certainly the largest in AEC / ERDA / DOE history, and remains so through 1996.

Walt Maybee

Fire Protection Trivia

Q. Who was the first Federal member of NFPA?

A. Captain J. S. Sewell of the US Corps of Engineers - in 1904.

Q. What's the highest rank a firefighter can have?

A. King.

Q. Come on, Walt that can't be right?

A. That's not what you asked. In 1886, King Kalakaaa was a member of the Hawaiian Fire Department and was active in fighting a large Honolulu fire that year.

Many politicians, and even royalty, have held honorary positions in many organizations, including fire departments. New York's "Boss" Tweed began his political career by using the organization of his fire company as a springboard. New York's Mayor La Guardia was a famous fire buff, but King Kalakaaa was the only one we have seen cited as an active member-participant while holding high rank.

Fire Safety Workshop

103 fire safety professionals from across the complex (including a few folks from other Federal agencies) attended the Year 2000 DOE/Contractor Fire Safety Workshop in Broomfield Colorado. (Many stayed for the NFPA World Fire Safety Expo in Denver the following week.) Attendees were treated to a diverse program which included; site tours of the Rocky Flats Environmental Technology Site and the National Renewable Energy Laboratory, plenary sessions featuring a spectrum of topics related to engineering, management and emergency services, and two excellent short courses on changes to the Life Safety Code and fire pump fundamentals.

Copies of the "Proceedings" may be obtained from Dennis Kubicki at:

dennis.kubicki@eh.doe.gov

Said The Wise Old Fire Protection Engineer (STWOFPE)

"My gosh, Boss," STBrightYoungFPE, "I can't believe it! Did you really get kicked off that assessment team?"

"That's right," STWOFPE, "The problem was, I knew too much about the site."

"Meaning What?" STBYFPE

"Meaning I said the report should be written before I went there."

Individuals charged with overview of a site should know something about it. To be specific, they should know what the strengths and weaknesses are beforehand; that's their job. They should know enough about the site, based on their continuing contact, so that they could write the report before they actually do an inspection. In fact, if there is a deficiency or major problem area that is NOT known beforehand, that itself is a significant deficiency. Not the problem itself, but the fact that it wasn't known to the reviewer. The penchant for DOE to utilize "independent" opinion is simply the desire for ignorance. (Apologies to the DNFSB et.al.) It can sometimes be useful, but it is never adequate. (In DOE in the early 90s, vast "Tiger Teams" were sent on site surveys without the option of even reading previous surveys without the option of even reading previous survey reports. Half the survey time was wasted just learning things that should have been known before they even went to the site.)

Walt Maybee

HEADQUARTERS HAPPENINGS

EH Reorganization Takes Effect

The realignment of roles, responsibilities and staff of the Office of Environment, Safety and Health took effect on July 2nd. Among the many changes include the shift of fire safety policy from the Office of Worker Health and Safety Policy (now known as the Office of Regulatory Liaison) to the Office of Nuclear and Facility Safety Policy under Richard Black. Jim Bisker, Leo Derderian and Chuck Ramsey are with this Office and will have varying roles in developing and interpreting policy, among other responsibilities.

The Office of Inspections (EH-2) will see its mission expanded to include oversight of new construction projects, the review of authorization basis documentation, as well as broad managerial evaluations and special inspections (such as accident investigations). Carl Caves and Dennis Kubicki are in this office and will share responsibilities related to fire protection.

Moratorium on Prescribed Fires

By memorandum dated June 5, 2000 from T. J. Glauthier to Program, Operations and Field Office Managers, DOE has formally announced an indefinite moratorium on "controlled burns." (This follows a verbally expressed moratorium announcement in mid-May). The moratorium will permit the completion of "an ongoing review of policies and practices" by EH. Specific questions regarding this action are to be directed to Steve Cary (EH-1) on 202-586-4693.

The memorandum identifies a path forward, which includes a reveiw to determine the need for additional DOE-wide policy and guidelines. The effort will be coordinated with other Federal Agencies, such as the Department of the Interior and the Forest Service. The review will involve the DOE Fire Safety Committee and a working group of DOE and contractor fire and environmental safety specialists. It was indicated that draft policy and guidelines will be proposed for internal review by October 1, 2000. A copy of this memorandum can be obtained from Jim Bisker on 301-903-6542 (jim.bisker@eh.doe.gov).

DOE Standard 1088 Reaffirmed

DOE Standard 1088-95, "Fire Protection for Relocatable Structures," has been reaffirmed. This action followed a 90-day review and comment period by DOE and contractor "Technical Standards Managers." The overwhelmingly positive response to the reaffirmation by the Standards Managers mimics that received from the DOE fire safety community in an earlier solicitation of opinion. (Two dissenters expressed the position that the Standard should be abolished.)

As noted above, DOE Handbook 1081, "Primer on Spontaneous Heating and Pyrophoricity," will soon be sent out for reaffirmation. Although most would agree that the Handbook is in need of updating, past efforts to solicit specific recommendations for improvement have not met with success. It is hoped that the reaffirmation process applied to 1081 will stimulate a concerted effort to identify needed text changes. The point of contact for this effort at Headquarters is Norm Schwartz, who can be reached on 301-903-2996 (norm.schwartz@eh.doe.gov).

Interpretations

The DOE Occupational Safety and Health (OSH) Standards Interpretation Response Line (1-800-292-8061) has issued the following fire protection-related interpretation since the last issue of DOe-Nuts:

- D00-04-014, "Storage of Flammable Liquids"

Note that this and other OSH Interpretations from the Hot Line are available from the Hot Line Home Page. To access a particular response, type:

http://tis-nt.eh.doe.gov/rl/pres/docs/D00XXXXX.HTM

where "XXXXX" is the unique document identifier. For example, the above interpretation can be found at:

http://tis-nt.eh.doe.gov/rl/pre/docs/D004014.HTM

Fire Protection Directory

It appears unlikely that a “hard copy” version of the DOE Fire protection Directory will be published this Year. Howevern the electronic directory, which can be accessed at:

http://tis.eh.doe.gov/fire/dir/default.htm

will continue to be supported. With the change in software, updates can be posted immediately. Updated entries should be sent to Dennis Kubicki at dennis.kubicki@eh.doe.gov

Thanks for the Memories

After 9 years as “Contributing Editor” to “DOE-Nuts,” Dennis Kubicki has resigned his position to focus on his new responsibilities with the DOE Headquarters Office of Oversight. He expressed his most sincere appreciation to Walt Maybee for allowing him to be associated with this publication, and to all those who took the time to contribute articles and other information.

The Future of “DOE-Nuts”. . . ?